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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,700	06/04/2001	Christopher W. Brumme	MS 167388.1	4955
27195	7590	06/05/2006	EXAMINER	
AMIN & TUROCY, LLP 24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET CLEVELAND, OH 44114			KANG, INSUN	
			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,700

Applicant(s)

BRUMME ET AL.

Examiner

Insun Kang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 28-34, 41-43 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 28-34, 41-43, and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the RCE amendment filed 2/28/2006.
2. As per applicant's request, claims 1, 28, 41-43, and 47 have been amended and claims 12-27, 35-40, 44-46, and 48 have been cancelled. Claims 1-11, 28-34, 41-43, and 47 are pending in the application.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11, 28-34, 41-43, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Per claims 1, 28, 41, and 47, it is unclear as to which "intermediate language representation" in the context of "providing the intermediate language representation" is referring. The claims simply recite "expressing an association...as an intermediate language representation" and then "providing the intermediate language representation." It appears that the intermediate language representation means simply a language format such as a bytecode. The associations are expressed in such an intermediate language representation according to the claims. Therefore, it is unclear whether the provided intermediate language representation is the expressed association in the intermediate language representation. It is interpreted as: the intermediate language representation of a source language computer program.

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As per claims 2-11, 29-34, and 42-43, these claims are rejected for dependency on the above rejected parent claims.

Claim Rejections - 35 USC § 101

5. Claims 41-43 are non-statutory because they are directed to a system comprising components. Although the independent claim starts out reciting a "system," the system does not have structural elements and comprises components that are disembodied arrangements so as to be called a "computer program" or compilation of facts, information, or data *per se*, without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the computer ("acts") or computer readable medium so as to enable the computer to perform the claimed instructions for determining and expressing the association etc. With no other structure in the independent claims to rely on, the alleged "system" of the independent claims turn out to be non-statutory for being a computer program *per se*. Thus the claims represent non-functional descriptive material that is not capable of producing a useful result, and hence represent only abstract ideas. Therefore, the claims are non-statutory.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-11, 28-34, 41-43, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Alpern (US Patent 6,651,248).

Per claim 1:

Alpern discloses:

- expressing an intermediate language representation of a sourced language computer program wherein an association between the declaration and an implementation (i.e. "efficient interface method dispatch, which includes an interface method table (IMT) for a given class of objects," col. 3 lines 15-20)
- determining whether a source language association rule related to a declaration is different from a default association rule for a target runtime (i.e. "in certain instances the identified IMT entry may store a pointer to a conflict resolution routine. In such instance, the branch and link operation performed ... transfer control to the conflict resolution routine pointed to by the identified IMT entry," col. Lines 7-12; "interface method signature dictionary...is defined that will store a plurality of entries each corresponding to a particular interface method signature of the interface methods declared and implemented by the objects of the program," col. 8 lines 50-61)
- expressing an association between the declaration and the implementation an intermediate language representation according to an override association rule

for the target runtime if the source language association rule is different from the default association rule for the target runtime (i.e. "in the event that the set S includes only a single interface method, the IMT entry stores a pointer to the implementation of the single interface method in the set S," col. 9 lines 20-30; "The conflict resolution routine pointer to by a given IMT array entry is used to identify ...the location of the particular interface method...for each virtual method," col. 8 lines 13-30)

- expressing an association between the declaration and the implementation an intermediate language representation according to the default association rule if the source language association rule is the same as the default association rule for the target runtime; and providing the intermediate language representation to the target runtime to compile the intermediate language representation into native code (i.e. "a method invocation routine performs...ID value assigned to the signature of the interface method to be invoked," col. 8 lines 1-7; col.7 lines 15-24)

as claimed.

Per claim 2:

The rejection of claim 1 is incorporated, and further, Alpern teaches:

- expressing an explicit association between the declaration and the implementation (i.e. "The VMT contains entries for all virtual methods, implemented by objects of the given class," col. 6 lines 39-64) as claimed.

Per claim 3:

The rejection of claim 2 is incorporated, and further, Alpern teaches creating an association between a class, a code body associated with the implementation and the declaration (i.e. "The VMT for a given class comprises a table of entries each containing a pointer to an implementation of a virtual method implemented by objects of the given class," col. 6 lines 39-46) as claimed.

Per claim 4:

The rejection of claim 3 is incorporated, and further, Alpern teaches
- creating an entry in an override association table having entries for the class, the code body and the declaration("The VMT for a given class comprises a table of entries each containing a pointer to an implementation of a virtual method implemented by objects of the given class," col. 6 lines 39-46) as claimed.

Per claim 5:

The rejection of claim 1 is incorporated, and further Alpern teaches:
-a method declaration signature, the implementation comprises an implementation signature, the default association rule for a target runtime comprises signature matching, and wherein expressing the association between the declaration and the implementation according to the override association rule for the target runtime if the source language association rule is different from the default association rule for the

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target runtime comprises expressing the association between the method declaration signature and the implementation signature if the source language association rule is different from signature matching (i.e. "in the event that the set S includes only a single interface method, the IMT entry stores a pointer to the implementation of the single interface method in the set S," col. 9 lines 20-30; "The conflict resolution routine pointer to by a given IMT array entry is used to identify ...the location of the particular interface method...for each virtual method," col. 8 lines 13-30).

Per claim 6:

The rejection of claim 5 is incorporated, and further Alpern teaches:

-creating the association between a class, a code body associated with the implementation signature, and the method declaration signature matching ("The VMT contains entries for all virtual methods, implemented by objects of the given class," col. 6 lines 39-64).

Per claim 7:

The rejection of claim 6 is incorporated, and further Alpern teaches:

-creating an entry in an override association table having entries for the class, the code body associated with the implementation signature, and the method declaration signature ("The conflict resolution routine pointer to by a given IMT array entry is used to identify ...the location of the particular interface method...for each virtual method," col. 8 lines 13-30).

Per claim 8:

The rejection of claim 5 is incorporated, and further Alpern teaches:

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-the method declaration signature matches a first implementation signature associated with a first implementation in the class and a second implementation signature associated with a second implementation in the class, and wherein expressing the association between the method declaration signature and the implementation signature according comprises expressing an explicit association between the method declaration signature and one of the first and second implementation signatures (i.e. col. 8 lines 13-30).

Per claim 9:

The rejection of claim 8 is incorporated, and further Alpern teaches:

-creating the association between a class, a code body associated with one of the first and second implementations, and the method declaration signature (i.e. col. 6 lines 39-64).

Per claim 10:

The rejection of claim 9 is incorporated, and further Alpern teaches:

-creating an entry in an override association table having entries for the class, the code body associated one of the first and second implementations, and the method declaration signature (i.e. col. 8 lines 13-30).

Per claim 11:

The rejection of claim 8 is incorporated, and further Alpern teaches:

-selecting one of the first and second implementations for association with the method declaration signature according to the source language association rule(i.e. col. 9 lines 20-30).

Per claims 28-33, they are the computer-readable medium versions of claims 1-8, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-8 above.

Per claim 34, it is the computer-readable medium version of claim 1, respectively, and is rejected for the same reasons set forth in connection with the rejection of claim 1 above.

Per claims 41-43, they are the system versions of claims 1, 3 and 4, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1, 3 and 4 above.

Per claim 47:

Alpern discloses:

-an association expression system for expressing an association between a source language declaration and an implementation in a language neutral fashion (i.e. "The dynamic loading and linking process creates and lays out Java objects according to a predetermined object model... this object model supports dynamic linking through a virtual method dispatch mechanism that includes a virtual method table...for a given

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class of objects...each containing a pointer to an implementation of a virtual method implemented by objects of the given class,” col. 6 lines 32-46)

-a first component to determine whether a source language association rule related to the source language declaration is different from a default association rule for a target runtime(“in certain instances the identified IMT entry may store a pointer to a conflict resolution routine. In such instance, the branch and link operation performed ... transfer control to the conflict resolution routine pointed to by the identified IMT entry,” col. Lines 7-12; “interface method signature dictionary...is defined that will store a plurality of entries each corresponding to a particular interface method signature of the interface methods declared and implemented by the objects of the program,” col. 8 lines 50-61)

-an association expression component to express the association

between the source language declaration and the implementation according to an override association rule for the target runtime as an intermediate language code if the source language association

rule is different from the default association rule for the target runtime (“The conflict resolution routine pointer to by a given IMT array entry is used to identify ...the location of the particular interface method...for each virtual method,” col. 8 lines 13-30)

- express the association between the declaration and the implementation according to the default association rule an intermediate language code if the source language association rule is the same as the default association rule for the target runtime, wherein the intermediate language code is provided to the target runtime (“a method

invocation routine performs...ID value assigned to the signature of the interface method to be invoked,” col. 8 lines 1-7; col.7 lines 15-24) as claimed.

Response to Arguments

8. Applicant's arguments filed 2/28/2006 have been fully considered but they are not persuasive.

The Applicant states that Alpern does not disclose expressing an association between the declaration and the implementation as an intermediate language representation according to ...to the target runtime.”

In response, Alpern discloses Java IMT and VMT (see fig 7 (a-c)) that are expressed as a bytecode.

Applicant further states that: “unlike the claimed subject matter, the system of Alpern performs conflict resolution at runtime.”

In response, in Alpern, the IMT entry stores a pointer to a conflict resolution routine in the event that the set S includes two or more interface methods. With the given IMT array entry, the two or more interface methods are associated and then the conflict resolution routine pointed to by a given IMT array entry is used to identify the location of the particular interface method at execution time (col. 8 lines 12-40).

Further, the claims are not recited in a way to indicate that the intermediate language representation in the context of “providing the intermediate language representation” contains the expressed associations, as the associations are expressed “as an

intermediate language representation.” If applicant means anything more, this must be brought out in the claims to further clarify the invention.

Therefore, Alpern discloses the limitations in the claims. Accordingly, the rejections to the claims have been maintained.

*Note: the applicant stated that nothing in either 37 CFR 1.1219(c) or 37 CFR 1.72 requires an abstract on a separate sheet. In response, specifically, 37 C.F.R. 1.72 recites: “A brief abstract of the technical disclosure in the specification must commence on a separate sheet.”

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 7:30-4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any inquiry of a general nature or relating to

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the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

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